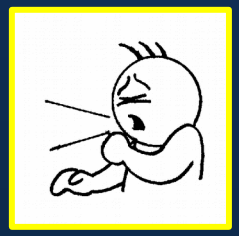
VIRAL AND ZOONOTIC DISEASE RESEARCH PROGRM
VZDRP
Study. Monitor. Detect



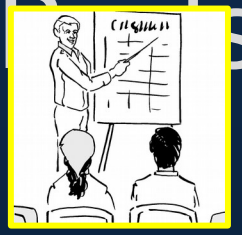
Respir
a

Arboviral
and

Hemorrha

Empowering nations and agencies through collaboration, with the means to better detect, diagnose, and mitigate viral infectious diseases of public importance, ensuring improved health and safer environments for the constituents

Migratory
Birds



Training

Respiratory

Influenza Like Illness Sentinel Surveillance-Egypt
To enhance the understanding of the prevalence and etiology of mild respiratory illness prevalence through collaboration with MOHP-Egypt and GDDRP. The project started in 1999 and has focused on testing for influenzavirus A and influenzavirus B. Additional respiratory pathogens are also tested for, and positive samples are subjected to advanced characterization following isolation to include sequencing and testing for markers of anti-viral resistance.

Severe Acute Respiratory Illness-EMARIS Network
To provide additional characterization of influenzavirus positive samples through virus isolation, sequencing and anti-viral resistance testing in collaboration with GDDRP

Adenovirus Characterization
Identification and characterization of human adenovirus isolates from patients with influenza like illness in collaboration with Adriana Kajon at Lovelace Respiratory Research Institute, Rania Siam at American University of Cairo and MOHP-Egypt.

Development and Enhancement of National Reference Labs or National Influenza Centers
Through bi-lateral and tri-lateral agreements with the WHO and ministries of health efforts are made to build the capacity of laboratories to detect and isolate seasonal influenzaviruses using standard techniques and reagents. We also provide QA/QC to partners that we have helped establish influenza testing and surveillance programs in EMRO and AFRO.

Respiratory

WHO H5 Reference Laboratory

NAMRU3 is one of eleven H5 reference laboratories in the WHO Global Influenza Surveillance and Response System (GISRS). We are responsible for providing confirmatory testing of suspected human or animal H5 cases by PCR, virus isolation (BSL3) and sequencing. Information and Data is conveyed to WHO and CDC collaborators in a timely manner so that it can be used by the global community and in the vaccine selection meetings.

Arboviral and Hemorrhagic Fever

Arboviral diagnostics for acute febrile illness (AFI) in Ghana and Djibouti. In collaboration with GDDRP and Ghana Detachment

Arbovirus detection in mosquito samples from Liberia. In collaboration with VBRP.

Arbovirus detection in human or mosquito samples from Yemen. In collaboration with VBRP.

Integrated human animal vector surveillance in Egypt, Ghana and Djibouti. In collaboration with GDDRP, and VBRP

Surveillance for viral and zoonotic etiologies in acute febrile patients in eastern Europe. Capacity building and hospital-based surveillance for AFI in 10 hospitals in Ukraine and Bulgaria. Staff were trained on all aspects of study design from enrollment to collection of samples, pathogen testing and bio-safety considerations and practices.

The characterization of ecologic and temporal indices for hantavirus infections in eastern Europe. In collaboration with the National Institute of Infectious and Parasitic Diseases (NCIPD)-Bulgaria, and NASA/Goddard Space Flight Center, this study aims to study rodent reservoir populations and prevalence and incidence of hantavirus infections and to quantify environmental factors associated with these changes. The data and satellite imagery will be used for predictive models to design control strategies for human hantavirus disease. The project was initiated in 2011 with training and initial rodent sampling.

Migratory Birds

Coordinated poultry and migratory bird surveillance in Egypt: Identifying risks of Highly Pathogenic Avian Influenza H5N1 emergence and spread. In collaboration with USGS, Egyptian Ministry of Environment and Ministry of Agriculture, and FAO this study aims to determine migration patterns using satellite telemetry and to determine rates of infection with AI by RT-PCR. To date over ~1000 samples have been tested with 10% positive for influenzavirus A. On-going work continues to isolate and determine the subtype of each positive sample.

Epizootological Monitoring and Biological Characterization of Avian Influenza in Kazakhstan. In collaboration with the Research Institute for Biological Safety Problems (RIBSP), USDA, Mount Sinai School of Medicine, Ministry of Education and Science-Kazakhstan, and with the Cooperative Biological Research (CBR Program) this program establishes structured active surveillance in Kazakhstan that will supply relevant information on influenza viruses circulating within the region.

Training and Workshops

A major emphasis of VZDRP is to build capacity through training and workshops in cooperation with WHO Headquarters, WHO Regional Offices, Ministries of Health, CDC-Atlanta, CDC-Fort Collins, NMRC, Cooperative Biological Engagement Programs, and within NAMRU3. This training encompasses support of National Influenza Centers (NICs) or candidate NICS as well as arboviral and hemorrhagic fever virus diagnosis.

In 2011 VZDRP, with our collaborators, over 28 trainings for 253 trainees from 24 countries were completed. Examples of some of the trainings include:

- Arbovirus Diagnostics–Yemen and Pakistan, Afghanistan
- Influenza Diagnostics and Sequencing – Afghanistan, Mali, Mauritania, Ghana, Turkmenistan, Tajikistan, Bahrain, Oman, Qatar and UAE.
- ILI Sentinel Surveillance Workshop –Egypt
- Biosafety training- S. Sudan